

SEQUENCE LISTING

<110> Heokstra, Merl F.
Xie, Weilin
Murray, Brion
Mercurio, Frank

<120> METHODS FOR MODULATING SIGNAL
TRANSDUCTION MEDIATED BY TGF-BETA AND RELATED PROTEINS

<130> 860098.433

<140> US
<141> 1999-08-29

<160> 32

<170> FastSEQ for Windows Version 3.0

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<212> PRT
<213> Homo sapien

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<222> (1)...(1)
<223> Xaa = Tyrosine or Phenylalanine

<221> VARIANT
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<223> Xaa = any amino acid; 0-1 residues may be missing

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<223> Xaa = any amino acid

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<223> Xaa = Valine, Isoleucine or Leucine

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Sequence Listing

<222> (30)...(30)
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<223> Xaa = any amino acid

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<223> Xaa = Leucine or Valine

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<223> Xaa = Valine or Leucine

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<223> Xaa = Threonine or Serine

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<223> Xaa = any amino acid

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    .       20          25          30
Xaa Xaa Gln Phe Xaa Thr Gly Xaa Xaa Arg Leu Pro Xaa Xaa Gly Phe
    .       35          40          45
Xaa Xaa Leu Xaa Ile Xaa Xaa
    .       50          55          60
Xaa Xaa Xaa Xaa Xaa Xaa Leu Pro Xaa Xaa His Thr Cys Phe Asn
    .       65          70          75          80
Xaa Leu Asp Leu Pro Xaa Tyr Xaa Ser Xaa Xaa Xaa Xaa Xaa Xaa Xaa ...
    .       85          90          95
Leu Xaa Xaa Ala Ile Xaa Xaa Xaa Xaa Xaa Xaa Phe
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<210> 2
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S E C R E T

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(e.g., S,H,P,D,E,T or Y)

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(e.g., S,H,P,D,E,T or Y)

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(e.g., S,H,P,D,E,T or Y)

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(e.g., S,H,P,D,E,T or Y)

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(e.g., S,H,P,D,E,T or Y)

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Xaa	Tyr	Tyr	Xaa	Xaa	His	Asn	Thr	Xaa	Thr	Thr	Xaa	Trp	Xaa	Xaa	Pro
								20		25			30		

Xaa

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Ser Pro Leu Pro Pro Gly Trp Glu Glu Arg Gln Asp Ile Leu Gly Arg
1 5 10 15
Thr Tyr Tyr Val Asn His Glu Ser Arg Arg Thr Gln Trp Lys Arg Pro
20 25 30
Thr Pro Gln Asp Asn Leu
35

<210> 4
<211> 38
<212> PRT
<213> Homo sapien

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1 5 10 15
Thr Tyr Tyr Val Asn His Glu Ser Arg Arg Thr Gln Trp Lys Arg Pro
20 25 30
Thr Pro Gln Asp Asn Leu
35

<210> 5
<211> 38
<212> PRT
<213> Homo sapien

<400> 5
Gly Phe Leu Pro Lys Gly Trp Glu Val Arg His Ala Pro Asn Gly Arg
1 5 10 15
Pro Phe Phe Ile Asp His Asn Thr Lys Thr Thr Thr Trp Glu Asp Pro
20 25 30
Arg Leu Lys Ile Pro Ala
35

<210> 6
<211> 38
<212> PRT
<213> Homo sapien

<400> 6
Gly Pro Leu Pro Pro Gly Trp Glu Glu Arg Thr His Thr Asp Gly Arg
1 5 10 15
Ile Phe Tyr Ile Asn His Asn Ile Lys Arg Thr Gln Trp Glu Asp Pro
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Arg Leu Glu Asn Val Ala
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<210> 7
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 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 7
 Gly Arg Leu Pro Pro Gly Trp Glu Arg Arg Thr Asp Asn Phe Gly Arg
 1 5 10 15
 Thr Tyr Tyr Val Asp His Asn Thr Arg Thr Thr Trp Lys Arg Pro
 20 25 30
 Thr Leu Asp Gln Thr Glu
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<210> 8
 <211> 38
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 8
 Gly Glu Leu Pro Ser Gly Trp Glu Gln Arg Phe Thr Pro Glu Gly Arg
 1 5 10 15
 Ala Tyr Phe Val Asp His Asn Thr Arg Thr Thr Trp Val Asp Pro
 20 25 30
 Arg Arg Gln Gln Tyr Ile
 35

<210> 9
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 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 9
 Gly Pro Leu Pro Ser Gly Trp Glu Met Arg Leu Thr Asn Thr Ala Arg
 1 5 10 15
 Val Tyr Phe Val Asp His Asn Thr Lys Thr Thr Trp Asp Asp Pro
 20 25 30
 Arg Leu Pro Ser Ser Leu
 35

<210> 10
 <211> 38
 <212> PRT
 <213> *Homo sapien*

<400> 10
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 1 5 10 15
 Thr Tyr Tyr Val Asp His Asn Thr Arg Thr Thr Trp Glu Arg Pro
 20 25 30
 Gln Pro Leu Pro Pro Gly
 35

<210> 11
 <211> 38
 <212> PRT

<213> Homo sapien

<400> 11
 Gln Pro Leu Pro Pro Gly Trp Glu Arg Arg Val Asp Asp Arg Arg Arg
 1 5 10 15
 Val Tyr Tyr Val Asp His Asn Thr Arg Thr Thr Thr Trp Gln Arg Pro
 20 25 30
 Thr Met Glu Ser Val Arg
 35

<210> 12

<211> 38

<212> PRT

<213> Homo sapien

<400> 12

Gly Pro Leu Pro Pro Gly Trp Glu Lys Arg Val Asp Ser Thr Asp Arg
 1 5 10 15
 Val Tyr Phe Val Asn His Asn Thr Lys Thr Thr Gln Trp Glu Asp Pro
 20 25 30
 Arg Thr Gln Gly Leu Gln
 35

<210> 13

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<213> Homo sapien

<400> 13

Glu Pro Leu Pro Glu Gly Trp Glu Ile Arg Tyr Thr Arg Glu Gly Val
 1 5 10 15
 Arg Tyr Phe Val Asp His Asn Thr Arg Thr Thr Phe Lys Asp Pro
 20 25 30
 Arg Asn Gly Lys Ser Ser
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<210> 14

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<220>

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<400> 14

Pro Pro Xaa Tyr

1

<210> 15

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<213> Homo sapien

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Xaa Pro Pro Pro Xaa Tyr
1 5

<210> 16
<211> 6
<212> PRT
<213> Homo sapien

<400> 16
Thr Pro Pro Pro Ala Tyr
1 5

<210> 17
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1 5 10

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<211> 6
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Thr Pro Pro Pro Gly Tyr
1 5

<210> 19
<211> 11
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<400> 19
Thr Pro Pro Pro Gly Tyr Xaa Ser Glu Asp Gly
1 5 10

<210> 20
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<400> 20
Glu Leu Glu Ser Pro Pro Pro Pro Tyr Ser Arg Tyr Pro Met
1 5 10

<210> 21
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Gly Pro Glu Ser Pro Pro Pro Pro Tyr Ser Arg Leu Ser Pro
1 5 10

<210> 22
<211> 14
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<400> 22
Pro Ala Asp Thr Pro Pro Pro Ala Tyr Leu Pro Pro Glu Asp
1 5 10

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<400> 23
Pro Ala Asp Thr Pro Pro Pro Ala Tyr Met Pro Pro Asp Asp
1 5 10

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<400> 24
Ile Pro Glu Thr Pro Pro Pro Gly Tyr Ile Ser Glu Asp Gly
1 5 10

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<400> 25

Ala Gly Leu Thr Pro Pro Pro Gly Tyr Leu Ser Glu Asp Gly
1 5 10

<210> 26
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<400> 26
Leu Pro Ser Gly Trp Glu Gln Arg Lys Asp Pro His Gly Arg Thr Tyr
1 5 10 15
Tyr Val Asp His Asn Thr Arg Thr Thr Trp Glu Arg Pro Gln Pro
20 25 30
Leu Pro Pro Gly Trp Glu
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<210> 27
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<400> 27
Pro Ala Asp Thr Pro Pro Pro Ala His Leu Pro Pro Glu Asp
1 5 10

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<400> 28
His Pro Gly Thr Pro Pro Pro Pro Tyr Thr Val Gly Pro Gly
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1 5 10

<210> 30
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<400> 30
Ile Pro Gly Thr Pro Pro Pro Asn His Asp Ser Leu Arg Leu
1 5 10

<210> 31
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<213> Homo sapien

<400> 31

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	20						25						30		
Glu	Asp	Ser	Phe	Gln	Gln	Ile	Met	Ala	Leu	Lys	Pro	Tyr	Asp	Leu	Arg
	35					40					45				
Arg	Arg	Leu	Tyr	Val	Ile	Phe	Arg	Gly	Glu	Gly	Leu	Asp	Tyr	Gly	
	50				55				60						
Gly	Leu	Ala	Arg	Glu	Trp	Phe	Phe	Leu	Leu	Ser	His	Glu	Val	Leu	Asn
	65				70			75					80		
· Pro	Met	Tyr	Cys	Leu	Phe	Glu	Tyr	Ala	Gly	Lys	Asn	Asn	Tyr	Cys	Leu
		85				90							95		
Gln	Ile	Asn	Pro	Ala	Ser	Thr	Ile	Asn	Pro	Asp	His	Leu	Ser	Tyr	Phe
	100					105			110						
Cys	Phe	Ile	Gly	Arg	Phe	Ile	Ala	Met	Ala	Leu	Phe	His	Gly	Lys	Phe
	115					120					125				
Ile	Asp	Thr	Gly	Phe	Ser	Leu	Pro	Phe	Tyr	Lys	Arg	Met	Leu	Ser	Lys
	130					135				140					
Lys	Leu	Thr	Ile	Lys	Asp	Leu	Glu	Ser	Ile	Asp	Thr	Glu	Phe	Tyr	Asn
	145				150			155			160				
Ser	Leu	Ile	Trp	Ile	Arg	Asp	Asn	Asn	Ile	Glu	Glu	Cys	Gly	Leu	Glu
		165				170					175				
Met	Tyr	Phe	Ser	Val	Asp	Met	Glu	Ile	Leu	Gly	Lys	Val	Thr	Ser	His
		180				185					190				
Asp	Leu	Lys	Leu	Gly	Gly	Ser	Asn	Ile	Leu	Val	Thr	Glu	Glu	Asn	Lys
		195				200					205				
Asp	Glu	Tyr	Ile	Gly	Leu	Met	Thr	Glu	Trp	Arg	Phe	Ser	Arg	Gly	Val
		210				215				220					
Gln	Glu	Gln	Thr	Lys	Ala	Phe	Leu	Asp	Gly	Phe	Asn	Glu	Val	Val	Pro
	225				230				235				240		
Leu	Gln	Trp	Leu	Gln	Tyr	Phe	Asp	Glu	Lys	Glu	Leu	Glu	Val	Met	Leu
			245			250					255				
Cys	Gly	Met	Gln	Glu	Val	Asp	Leu	Ala	Asp	Trp	Gln	Arg	Asn	Thr	Val
			260			265					270				
Tyr	Arg	His	Tyr	Thr	Arg	Asn	Ser	Lys	Gln	Ile	Ile	Trp	Phe	Trp	Gln
			275			280					285				
Phe	Val	Lys	Glu	Thr	Asp	Asn	Glu	Val	Arg	Met	Arg	Leu	Leu	Gln	Phe
		290				295				300					
Val	Thr	Gly	Thr	Cys	Arg	Leu	Pro	Leu	Gly	Gly	Phe	Ala	Glu	Leu	Met
	305				310				315				320		
Gly	Ser	Asn	Gly	Pro	Arg	Asn	Ser	Gln	Lys	Phe	Cys	Ile	Glu	Lys	Val
				325				330					335		
Gly	Lys	Asp	Thr	Trp	Leu	Pro	Arg	Ser	His	Thr	Cys	Phe	Asn	Arg	Leu
			340			345						350			
Asp	Leu	Pro	Pro	Tyr	Lys	Ser	Tyr	Glu	Gln	Leu	Lys	Glu	Lys	Leu	Leu
			355			360					365				
Phe	Ala	Ile	Glu	Glu	Thr	Glu									
	370				375										

<210> 32

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<212> PRT

<213> Homo sapien

<400> 32

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Ala	Leu	Pro	Ser	His	Val	Lys	Ile	Asn	Val	Ser	Arg	Gln	Thr	Leu	Phe
					20				25						30
Glu	Asp	Ser	Phe	Gln	Gln	Ile	Met	Ala	Leu	Lys	Pro	Tyr	Asp	Leu	Arg
						35			40						45
Arg	Arg	Leu	Tyr	Val	Ile	Phe	Arg	Gly	Glu	Gly	Leu	Asp	Tyr	Gly	
					50			55			60				
Gly	Leu	Ala	Arg	Glu	Trp	Phe	Phe	Leu	Leu	Ser	His	Glu	Val	Leu	Asn
	65					70				75					80
Pro	Met	Tyr	Cys	Leu	Phe	Glu	Tyr	Ala	Gly	Lys	Asn	Asn	Tyr	Cys	Leu
					85			90							95
Gln	Ile	Asn	Pro	Ala	Ser	Thr	Ile	Asn	Pro	Asp	His	Leu	Ser	Tyr	Phe
						100			105						110
Cys	Phe	Ile	Gly	Arg	Phe	Ile	Ala	Met	Ala	Leu	Phe	His	Gly	Lys	Phe
						115			120						125
Ile	Asp	Thr	Gly	Phe	Ser	Leu	Pro	Phe	Tyr	Lys	Arg	Met	Leu	Ser	Lys
	130					135				140					
Lys	Leu	Thr	Ile	Lys	Asp	Leu	Glu	Ser	Ile	Asp	Thr	Glu	Phe	Tyr	Asn
	145					150				155					160
Ser	Leu	Ile	Trp	Ile	Arg	Asp	Asn	Asn	Ile	Glu	Glu	Cys	Gly	Leu	Glu
						165			170						175
Met	Tyr	Phe	Ser	Val	Asp	Met	Glu	Ile	Leu	Gly	Lys	Val	Thr	Ser	His
						180			185						190
Asp	Leu	Lys	Leu	Gly	Gly	Ser	Asn	Ile	Leu	Val	Thr	Glu	Glu	Asn	Lys
						195			200						205
Asp	Glu	Tyr	Ile	Gly	Leu	Met	Thr	Glu	Trp	Arg	Phe	Ser	Arg	Gly	Val
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Gln	Glu	Gln	Thr	Lys	Ala	Phe	Leu	Asp	Gly	Phe	Asn	Glu	Val	Val	Pro
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Leu	Gln	Trp	Leu	Gln	Tyr	Phe	Asp	Glu	Lys	Glu	Leu	Glu	Val	Met	Leu
						245			250						255
Cys	Gly	Met	Gln	Glu	Val	Asp	Leu	Ala	Asp	Trp	Gln	Arg	Asn	Thr	Val
						260			265						270
Tyr	Arg	His	Tyr	Thr	Arg	Asn	Ser	Lys	Gln	Ile	Ile	Trp	Phe	Trp	Gln
						275			280						285
Phe	Val	Lys	Glu	Thr	Asp	Asn	Glu	Val	Arg	Met	Arg	Leu	Leu	Gln	Phe
						290			295						300
Val	Thr	Gly	Thr	Cys	Arg	Leu	Pro	Leu	Gly	Gly	Phe	Ala	Glu	Leu	Met
						305			310			315			320
Gly	Ser	Asn	Gly	Pro	Arg	Asn	Ser	Gln	Lys	Phe	Cys	Ile	Glu	Lys	Val
						325			330						335
Gly	Lys	Asp	Thr	Trp	Leu	Pro	Arg	Ser	His	Thr	Cys	Phe	Asn	Arg	Leu
						340			345						350
Asp	Leu	Pro	Pro	Tyr	Lys	Ser	Tyr	Glu	Gln	Leu	Lys	Glu	Lys	Leu	Leu
						355			360						365
Phe	Ala	Ile	Glu	Glu	Thr	Glu	Gly	Phe	Gly	Gln	Glu				
						370			375						380